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ALS Environmental  
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[www.alsglobal.com](http://www.alsglobal.com)

June 08, 2017

**Analytical Report for Service Request No: K1704749**

Lynda Lombardi  
AMEC Foster Wheeler Environment & Infrastructure Inc.  
10940 White Rock Road  
Suite 190  
Rancho Cordova, CA 95670

**RE: Leviathan Mine RI/FS / 0013091150 On-Prop**

Dear Lynda,

Enclosed are the results of the sample(s) submitted to our laboratory May 11, 2017  
For your reference, these analyses have been assigned our service request number **K1704749**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at [Kelley.Lovejoy@alsglobal.com](mailto:Kelley.Lovejoy@alsglobal.com).

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

A handwritten signature in black ink that reads "Kelley Lovejoy".

Kelley Lovejoy  
Project Manager



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## Table of Contents

- Acronyms
- Qualifiers
- State Certifications, Accreditations, And Licenses
- Case Narrative
- Chain of Custody
- Metals

## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### Inorganic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### Organic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso**  
**State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjlabs.com/">http://www.pjlabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.alsglobal.com](http://www.alsglobal.com) or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
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Phone (360)577-7222 Fax (360)636-1068  
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**ALS ENVIRONMENTAL**

**Client:** AMEC Foster Wheeler Environment & Infrastructure  
**Project:** Leviathan Mine RI/FS/ 0013091150 On-Prop  
**Sample Matrix:** Surface Water      **Service Request No.:** K1704749  
   **Date Received:** 05/11/17

**Case Narrative**

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

**Sample Receipt**

One surface water sample was received for analysis at ALS Environmental on 05/11/17. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

**Total and Dissolved Metals**

No anomalies associated with the analysis of this sample were observed.

Approved by

*Kelley Lovejoy*



## Chain of Custody

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# Laboratory Management Program LaMP Chain of Custody Record

K1704749  
Page 1 of 1

BP/ARC Project Name: Leviathan Mine RI/FS

Req Due Date (mm/dd/yy):

Rush TAT: Yes  No 

BP/ARC Facility No:

Lab Work Order Number:

Lab Name: ALS Environmental			BP/ARC Facility Address: Leviathan Mine						Consultant/Contractor: Amec Foster Wheeler 0013091150 On-Prop / Off-Prop / Source / RSA												
Lab Address: 1317 South 13th Avenue, Kelso, WA 98626			City, State, ZIP Code: Alpine County, California																		
Lab PM: Kelley Lovejoy			Lead Regulatory Agency: U.S. EPA Region IX						Address: 10940 White Rock Rd, Ste 190, Rancho Cordova, CA 95670												
Lab Phone: 360-577-7222			California Global ID No.:						Consultant/Contractor PM: Marc Lombardi												
Lab Shipping Acct: 1102-6855-6 (ALS Acct #)			Enfos Proposal No: D013P-0019 Work Release No: WR312386						Phone: 916-636-3200												
Lab Bottle Order No: NA			Accounting Mode: Provision <input checked="" type="checkbox"/> OOC-BU <input type="checkbox"/> OOC-RM <input type="checkbox"/>						Email Report/EDD To: maria.barajas@amecfw.com												
Other Info: Surface Water Investigation			Stage: 4_Execute Activity: Spend						Invoice To: BP/ARC <input checked="" type="checkbox"/> Contractor <input type="checkbox"/>												
BP/ARC EBM: Anthony Brown			Matrix		No. Containers / Preservative				Requested Analyses			Report Type & QC Level									
EBM Phone: 714-228-6770			Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	Diss Metals <sup>1</sup> (E200.7/E200.8/ E245.1)	Total Metals (E200.7/E200.8/ E245.1)	Major Cations <sup>2</sup> (E200.7)	Hardness-CaCO <sub>3</sub> (SM 234(B)) Anions: Cl, NO <sub>3</sub> -N, SO <sub>4</sub> (E300.0)	PO <sub>4</sub> -P (E300.0 or E365.3)	Alkalinity-all forms <sup>3</sup> (SM 2320B) Acidity (SM 2310B)	TDS (SM 2540C)	NH <sub>3</sub> -N (SM 4500-NH3 D or G)	DOC (SM 5310B or C)	MS/MSD	Standard <input checked="" type="checkbox"/> Full Data Package <input type="checkbox"/>
Lab No.	Sample Description	Date	Time														Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.				
	SNL05101701	5/10/17	0930	X	2	0	0	2	0	X	X						Dissolved metals and DOC samples are filtered in the field.				

<sup>1</sup> Metals are: Fe, Mn (E200.7); Al, Sb, As,

Ba, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Ag,

V, Ti and Zn (E200.8); Hg (E245.1)

<sup>2</sup> Major Cations are: Ca, K, Na, Mg<sup>3</sup> Alkalinity as Total, HCO<sub>3</sub>, CO<sub>3</sub>, OH

Sampler's Name: Annie Berlinghieri	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time				
Sampler's Company: Amec Foster Wheeler	Leviathan Mine / AFW	5/10/17	1630	J Medea USE	5/10	1630				
Shipment Method: FedEx	Ship Date: 5/10/17	J Medea	USE	J Medea	USE	1630				
Shipment Tracking No: 811288911130				J Medea	USE	1630				
Special Instructions:										
THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No		Temp Blank: Yes / No		Cooler Temp on Receipt: _____ °F/C		Trip Blank: Yes / No		MS/MSD Sample Submitted: Yes / No		



PC Kelly

## Cooler Receipt and Preservation Form

Client AMEC

Service Request K17

Received: 5/11/17 Opened: 5/11/17 By: J Unloaded: 5/11/17 By: J

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? see front  
If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
7.9	8.0	9.4	9.5	+0.1	308		811288911130		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* If applicable, tissue samples were received: Frozen Partially Thawed Thawed
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:

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## Metals

**ALS Environmental—Kelso Laboratory**  
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**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water  
**Sample Name:** SWL05101701  
**Lab Code:** K1704749-001

**Service Request:** K1704749  
**Date Collected:** 05/10/17 09:30  
**Date Received:** 05/11/17 09:30

**Basis:** NA

**Dissolved Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Aluminum	200.7	<b>50100</b>	ug/L	11	4	1	05/26/17 10:45	05/19/17	
Antimony	200.8	<b>117</b>	ug/L	0.050	0.020	1	05/26/17 13:38	05/19/17	
Arsenic	200.8	<b>53.1</b>	ug/L	0.50	0.08	1	05/26/17 13:38	05/19/17	
Barium	200.8	<b>602</b>	ug/L	0.050	0.020	1	05/26/17 13:38	05/19/17	
Beryllium	200.8	<b>20.4</b>	ug/L	0.30	0.004	1	05/26/17 13:38	05/19/17	
Cadmium	200.8	<b>21.6</b>	ug/L	0.020	0.006	1	05/26/17 13:38	05/19/17	
Chromium	200.8	<b>50.1</b>	ug/L	0.20	0.04	1	05/26/17 13:38	05/19/17	
Cobalt	200.8	<b>398</b>	ug/L	0.020	0.006	1	05/26/17 13:38	05/19/17	
Copper	200.8	<b>59.8</b>	ug/L	0.10	0.03	1	05/26/17 13:38	05/19/17	
Iron	200.7	<b>32400</b>	ug/L	21	3	1	05/26/17 10:45	05/19/17	
Lead	200.8	<b>35.6</b>	ug/L	0.020	0.002	1	05/26/17 13:38	05/19/17	
Manganese	200.7	<b>59.3</b>	ug/L	1.1	0.07	1	05/26/17 10:45	05/19/17	
Mercury	245.1	<b>16.6</b>	ug/L	1.0	0.1	5	05/31/17 09:22	05/26/17	
Nickel	200.8	<b>75.6</b>	ug/L	0.20	0.04	1	05/26/17 13:38	05/19/17	
Selenium	200.8	<b>76.9</b>	ug/L	1.0	0.07	1	05/26/17 13:38	05/19/17	
Silver	200.8	<b>33.0</b>	ug/L	0.020	0.005	1	05/26/17 13:38	05/19/17	
Thallium	200.8	<b>58.3</b>	ug/L	0.020	0.006	1	05/26/17 13:38	05/19/17	
Vanadium	200.8	<b>334</b>	ug/L	0.20	0.03	1	05/26/17 13:38	05/19/17	
Zinc	200.8	<b>437</b>	ug/L	2.0	0.2	1	05/26/17 13:38	05/19/17	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water  
**Sample Name:** SWL05101701  
**Lab Code:** K1704749-001

**Service Request:** K1704749  
**Date Collected:** 05/10/17 09:30  
**Date Received:** 05/11/17 09:30

**Basis:** NA

**Total Metals**

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.7	<b>51500</b>	ug/L	11	4	1	05/26/17 10:30	05/19/17	
Antimony	200.8	<b>115</b>	ug/L	0.050	0.020	1	05/26/17 12:59	05/19/17	
Arsenic	200.8	<b>51.9</b>	ug/L	0.50	0.08	1	05/26/17 12:59	05/19/17	
Barium	200.8	<b>593</b>	ug/L	0.050	0.020	1	05/26/17 12:59	05/19/17	
Beryllium	200.8	<b>19.9</b>	ug/L	0.30	0.004	1	05/26/17 12:59	05/19/17	
Cadmium	200.8	<b>21.5</b>	ug/L	0.020	0.006	1	05/26/17 12:59	05/19/17	
Calcium	200.7	<b>7030</b>	ug/L	21	0.9	1	05/26/17 10:30	05/19/17	
Chromium	200.8	<b>48.4</b>	ug/L	0.20	0.04	1	05/26/17 12:59	05/19/17	
Cobalt	200.8	<b>385</b>	ug/L	0.020	0.006	1	05/26/17 12:59	05/19/17	
Copper	200.8	<b>57.3</b>	ug/L	0.10	0.03	1	05/26/17 12:59	05/19/17	
Iron	200.7	<b>32000</b>	ug/L	21	3	1	05/26/17 10:30	05/19/17	
Lead	200.8	<b>35.4</b>	ug/L	0.020	0.002	1	05/26/17 12:59	05/19/17	
Magnesium	200.7	<b>52600</b>	ug/L	5.3	0.3	1	05/26/17 10:30	05/19/17	
Manganese	200.7	<b>67.5</b>	ug/L	1.1	0.07	1	05/26/17 10:30	05/19/17	
Mercury	245.1	<b>17.2</b>	ug/L	1.0	0.1	5	05/31/17 09:20	05/26/17	
Nickel	200.8	<b>74.1</b>	ug/L	0.20	0.04	1	05/26/17 12:59	05/19/17	
Potassium	200.7	<b>8850</b>	ug/L	210	60	1	05/26/17 10:30	05/19/17	
Selenium	200.8	<b>80.3</b>	ug/L	1.0	0.07	1	05/26/17 12:59	05/19/17	
Silver	200.8	<b>32.3</b>	ug/L	0.020	0.005	1	05/26/17 12:59	05/19/17	
Sodium	200.7	<b>7910</b>	ug/L	210	20	1	05/26/17 10:30	05/19/17	
Thallium	200.8	<b>58.3</b>	ug/L	0.020	0.006	1	05/26/17 12:59	05/19/17	
Vanadium	200.8	<b>323</b>	ug/L	0.20	0.03	1	05/26/17 12:59	05/19/17	
Zinc	200.8	<b>424</b>	ug/L	2.0	0.2	1	05/26/17 12:59	05/19/17	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water  
**Sample Name:** Method Blank  
**Lab Code:** KQ1706204-01

**Service Request:** K1704749  
**Date Collected:** NA  
**Date Received:** NA

**Basis:** NA

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Aluminum	200.7	ND U	ug/L	11	4	1	05/26/17 10:26	05/19/17	
Calcium	200.7	<b>10 J</b>	ug/L	21	0.9	1	05/26/17 10:26	05/19/17	
Iron	200.7	ND U	ug/L	21	3	1	05/26/17 10:26	05/19/17	
Magnesium	200.7	<b>3.2 J</b>	ug/L	5.3	0.3	1	05/26/17 10:26	05/19/17	
Manganese	200.7	<b>0.3 J</b>	ug/L	1.1	0.07	1	05/26/17 10:26	05/19/17	
Potassium	200.7	ND U	ug/L	210	60	1	05/26/17 10:26	05/19/17	
Sodium	200.7	ND U	ug/L	210	20	1	05/26/17 10:26	05/19/17	

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Analytical Report

<b>Client:</b>	AMEC Foster Wheeler E & I (Geomatrix)	<b>Service Request:</b>	K1704749
<b>Project:</b>	Leviathan Mine RI/FS/0013091150 On-Prop	<b>Date Collected:</b>	NA
<b>Sample Matrix:</b>	Surface Water	<b>Date Received:</b>	NA
<b>Sample Name:</b>	Method Blank	<b>Basis:</b>	NA
<b>Lab Code:</b>	KQ1706206-01		

**Total Metals**

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND U	ug/L	0.050	0.020	1	05/26/17 12:51	05/19/17	
Arsenic	200.8	ND U	ug/L	0.50	0.08	1	05/26/17 12:51	05/19/17	
Barium	200.8	ND U	ug/L	0.050	0.020	1	05/26/17 12:51	05/19/17	
Beryllium	200.8	ND U	ug/L	0.30	0.004	1	05/26/17 12:51	05/19/17	
Cadmium	200.8	ND U	ug/L	0.020	0.006	1	05/26/17 12:51	05/19/17	
Chromium	200.8	ND U	ug/L	0.20	0.04	1	05/26/17 12:51	05/19/17	
Cobalt	200.8	ND U	ug/L	0.020	0.006	1	05/26/17 12:51	05/19/17	
Copper	200.8	<b>0.04 J</b>	ug/L	0.10	0.03	1	05/26/17 12:51	05/19/17	
Lead	200.8	<b>0.009 J</b>	ug/L	0.020	0.002	1	05/26/17 12:51	05/19/17	
Nickel	200.8	ND U	ug/L	0.20	0.04	1	05/26/17 12:51	05/19/17	
Selenium	200.8	ND U	ug/L	1.0	0.07	1	05/26/17 12:51	05/19/17	
Silver	200.8	ND U	ug/L	0.020	0.005	1	05/26/17 12:51	05/19/17	
Thallium	200.8	ND U	ug/L	0.020	0.006	1	05/26/17 12:51	05/19/17	
Vanadium	200.8	ND U	ug/L	0.20	0.03	1	05/26/17 12:51	05/19/17	
Zinc	200.8	<b>0.2 J</b>	ug/L	2.0	0.2	1	05/26/17 12:51	05/19/17	

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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix) **Service Request:** K1704749  
**Project:** Leviathan Mine RI/FS/0013091150 On-Prop **Date Collected:** NA  
**Sample Matrix:** Surface Water **Date Received:** NA  
  
**Sample Name:** Method Blank **Basis:** NA  
**Lab Code:** KQ1706207-01

**Total Metals**

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	245.1	ND U	ug/L	0.20	0.02	1	05/31/17 06:31	05/26/17	

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## QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water

**Service Request:** K1704749  
**Date Collected:** 05/10/17  
**Date Received:** 05/11/17  
**Date Analyzed:** 05/26/17

## Replicate Sample Summary

## Dissolved Metals

**Sample Name:** SWL05101701      **Units:** ug/L  
**Lab Code:** K1704749-001      **Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample		RPD	RPD Limit
					KQ1706204-06	Result		
Aluminum	200.7	11	4	50100	50900	50500	2	20
Calcium	200.7	21	0.9	7100	7110	7100	<1	20
Iron	200.7	21	3	32400	32400	32400	<1	20
Magnesium	200.7	5.3	0.3	53200	53300	53300	<1	20
Manganese	200.7	1.1	0.07	59.3	58.7	59.0	<1	20
Potassium	200.7	210	60	8840	8890	8870	<1	20
Sodium	200.7	210	20	8000	8000	8000	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water

**Service Request:** K1704749  
**Date Collected:** 05/10/17  
**Date Received:** 05/11/17  
**Date Analyzed:** 05/26/17

**Replicate Sample Summary**

**Total Metals**

**Sample Name:** SWL05101701                            **Units:** ug/L  
**Lab Code:** K1704749-001                            **Basis:** NA

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>MDL</b>	<b>Sample Result</b>	<b>Duplicate Sample</b>		<b>RPD</b>	<b>RPD Limit</b>
					<b>KQ1706204-03</b>	<b>Result</b>		
Aluminum	200.7	11	4	51500	49600	50500	4	20
Calcium	200.7	21	0.9	7030	7230	7130	3	20
Iron	200.7	21	3	32000	32100	32100	<1	20
Magnesium	200.7	5.3	0.3	52600	51300	51900	3	20
Manganese	200.7	1.1	0.07	67.5	60.0	63.8	12	20
Potassium	200.7	210	60	8850	8680	8770	2	20
Sodium	200.7	210	20	7910	7770	7840	2	20

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**ALS Group USA, Corp.**

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## QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water

**Service Request:** K1704749  
**Date Collected:** 05/10/17  
**Date Received:** 05/11/17  
**Date Analyzed:** 05/26/17

**Replicate Sample Summary****Dissolved Metals**

**Sample Name:** SWL05101701      **Units:** ug/L  
**Lab Code:** K1704749-001      **Basis:** NA

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>MDL</b>	<b>Sample Result</b>	<b>Duplicate Sample</b>		<b>RPD</b>	<b>RPD Limit</b>
					<b>KQ1706206-09</b>	<b>Result</b>		
Antimony	200.8	0.050	0.020	117	116	116	<1	20
Arsenic	200.8	0.50	0.08	53.1	52.0	52.6	2	20
Barium	200.8	0.050	0.020	602	600	601	<1	20
Beryllium	200.8	0.30	0.004	20.4	20.4	20.4	<1	20
Cadmium	200.8	0.020	0.006	21.6	21.6	21.6	<1	20
Chromium	200.8	0.20	0.04	50.1	48.8	49.4	3	20
Cobalt	200.8	0.020	0.006	398	389	393	2	20
Copper	200.8	0.10	0.03	59.8	58.4	59.1	2	20
Lead	200.8	0.020	0.002	35.6	35.7	35.6	<1	20
Nickel	200.8	0.20	0.04	75.6	73.9	74.7	2	20
Selenium	200.8	1.0	0.07	76.9	76.1	76.5	<1	20
Silver	200.8	0.020	0.005	33.0	32.9	32.9	<1	20
Thallium	200.8	0.020	0.006	58.3	58.5	58.4	<1	20
Vanadium	200.8	0.20	0.03	334	328	331	2	20
Zinc	200.8	2.0	0.2	437	426	432	3	20

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QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water

**Service Request:** K1704749  
**Date Collected:** 05/10/17  
**Date Received:** 05/11/17  
**Date Analyzed:** 05/26/17

**Replicate Sample Summary**

**Total Metals**

**Sample Name:** SWL05101701    **Units:** ug/L  
**Lab Code:** K1704749-001    **Basis:** NA

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>MDL</b>	<b>Sample Result</b>	<b>Duplicate Sample</b>		<b>RPD</b>	<b>RPD Limit</b>
					<b>KQ1706206-03</b>	<b>Result</b>		
Antimony	200.8	0.050	0.020	115	117	116	2	20
Arsenic	200.8	0.50	0.08	51.9	51.4	51.6	<1	20
Barium	200.8	0.050	0.020	593	604	598	2	20
Beryllium	200.8	0.30	0.004	19.9	20.3	20.1	2	20
Cadmium	200.8	0.020	0.006	21.5	21.5	21.5	<1	20
Chromium	200.8	0.20	0.04	48.4	48.9	48.7	<1	20
Cobalt	200.8	0.020	0.006	385	392	389	2	20
Copper	200.8	0.10	0.03	57.3	58.2	57.8	2	20
Lead	200.8	0.020	0.002	35.4	36.1	35.8	2	20
Nickel	200.8	0.20	0.04	74.1	74.9	74.5	1	20
Selenium	200.8	1.0	0.07	80.3	75.8	78.1	6	20
Silver	200.8	0.020	0.005	32.3	33.2	32.7	3	20
Thallium	200.8	0.020	0.006	58.3	59.0	58.7	1	20
Vanadium	200.8	0.20	0.03	323	327	325	1	20
Zinc	200.8	2.0	0.2	424	426	425	<1	20

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**ALS Group USA, Corp.**

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QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water

**Service Request:** K1704749  
**Date Collected:** NA  
**Date Received:** NA  
**Date Analyzed:** 05/31/17

**Replicate Sample Summary****Dissolved Metals**

**Sample Name:** Batch QC **Units:** ug/L  
**Lab Code:** K1704852-001 **Basis:** NA

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>MDL</b>	<b>Sample Result</b>	<b>Duplicate Sample</b>	<b>KQ1706207-06</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>
					<b>Result</b>				
Mercury	245.1	0.20	0.02	ND U	ND U	ND	-		20

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Superset Reference:

**ALS Group USA, Corp.**

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## QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water

**Service Request:** K1704749  
**Date Collected:** NA  
**Date Received:** NA  
**Date Analyzed:** 05/31/17

**Replicate Sample Summary****Total Metals**

**Sample Name:** Batch QC **Units:** ug/L  
**Lab Code:** K1704852-001 **Basis:** NA

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>MDL</b>	<b>Sample Result</b>	<b>Duplicate Sample</b>	<b>KQ1706207-03</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>
					<b>Result</b>				
Mercury	245.1	0.20	0.02	0.06 J	0.05 J		0.06	4	20

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Superset Reference:

**ALS Group USA, Corp.**  
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QA/QC Report

<b>Client:</b>	AMEC Foster Wheeler E & I (Geomatrix)	<b>Service Request:</b>	K1704749
<b>Project:</b>	Leviathan Mine RI/FS/0013091150 On-Prop	<b>Date Collected:</b>	05/10/17
<b>Sample Matrix:</b>	Surface Water	<b>Date Received:</b>	05/11/17
		<b>Date Analyzed:</b>	05/26/17
		<b>Date Extracted:</b>	05/19/17

**Duplicate Matrix Spike Summary**  
**Dissolved Metals**

<b>Sample Name:</b>	SWL05101701	<b>Units:</b>	ug/L
<b>Lab Code:</b>	K1704749-001	<b>Basis:</b>	NA
<b>Analysis Method:</b>	200.7		
<b>Prep Method:</b>	EPA CLP-METALS ILM04.0		

<b>Analyte Name</b>	Matrix Spike KQ1706204-07					Duplicate Matrix Spike KQ1706204-08				
	<b>Sample Result</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>	<b>RPD</b>	<b>RPD Limit</b>
Aluminum	50100	52900	2000	140 #	51800	2000	82 #	70-130	2	20
Calcium	7100	16700	10000	96	16600	10000	95	70-130	<1	20
Iron	32400	33700	1000	126 #	33600	1000	122 #	70-130	<1	20
Magnesium	53200	62800	10000	96 #	62300	10000	91 #	70-130	<1	20
Manganese	59.3	520	500	92	522	500	93	70-130	<1	20
Potassium	8840	18300	10000	94	18100	10000	93	70-130	<1	20
Sodium	8000	17600	10000	96	17400	10000	94	70-130	1	20

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**ALS Group USA, Corp.**  
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QA/QC Report

<b>Client:</b>	AMEC Foster Wheeler E & I (Geomatrix)	<b>Service Request:</b>	K1704749
<b>Project:</b>	Leviathan Mine RI/FS/0013091150 On-Prop	<b>Date Collected:</b>	05/10/17
<b>Sample Matrix:</b>	Surface Water	<b>Date Received:</b>	05/11/17
		<b>Date Analyzed:</b>	05/26/17
		<b>Date Extracted:</b>	05/19/17

**Duplicate Matrix Spike Summary**  
**Total Metals**

<b>Sample Name:</b>	SWL05101701	<b>Units:</b>	ug/L
<b>Lab Code:</b>	K1704749-001	<b>Basis:</b>	NA
<b>Analysis Method:</b>	200.7		
<b>Prep Method:</b>	EPA CLP-METALS ILM04.0		

Analyte Name	Matrix Spike KQ1706204-04					Duplicate Matrix Spike KQ1706204-05				
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Aluminum	51500	51400	2000	-2 #	51100	2000	-19 #	70-130	<1	20
Calcium	7030	16400	10000	93	16400	10000	93	70-130	<1	20
Iron	32000	33600	1000	158 #	33400	1000	143 #	70-130	<1	20
Magnesium	52600	61500	10000	89 #	62000	10000	94 #	70-130	<1	20
Manganese	67.5	528	500	92	517	500	90	70-130	2	20
Potassium	8850	18100	10000	92	18100	10000	92	70-130	<1	20
Sodium	7910	17200	10000	93	17300	10000	94	70-130	<1	20

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**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

<b>Client:</b>	AMEC Foster Wheeler E & I (Geomatrix)	<b>Service Request:</b>	K1704749
<b>Project:</b>	Leviathan Mine RI/FS/0013091150 On-Prop	<b>Date Collected:</b>	05/10/17
<b>Sample Matrix:</b>	Surface Water	<b>Date Received:</b>	05/11/17
		<b>Date Analyzed:</b>	05/26/17
		<b>Date Extracted:</b>	05/19/17

**Duplicate Matrix Spike Summary**  
**Dissolved Metals**

<b>Sample Name:</b>	SWL05101701	<b>Units:</b>	ug/L
<b>Lab Code:</b>	K1704749-001	<b>Basis:</b>	NA
<b>Analysis Method:</b>	200.8		
<b>Prep Method:</b>	EPA CLP-METALS ILM04.0		

Analyte Name	Matrix Spike KQ1706206-07			Duplicate Matrix Spike KQ1706206-08					RPD Limit	
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
Antimony	117	166	50.0	98	164	50.0	95	70-130	1	20
Arsenic	53.1	103	50.0	100	100	50.0	95	70-130	2	20
Barium	602	698	100	96 #	694	100	92 #	70-130	<1	20
Beryllium	20.4	22.9	2.50	101 #	22.4	2.50	82 #	70-130	2	20
Cadmium	21.6	45.0	25.0	94	44.7	25.0	92	70-130	<1	20
Chromium	50.1	59.8	10.0	97 #	58.8	10.0	87 #	70-130	2	20
Cobalt	398	416	25.0	71 #	409	25.0	44 #	70-130	2	20
Copper	59.8	70.5	12.5	86 #	69.1	12.5	74 #	70-130	2	20
Lead	35.6	78.6	50.0	86	77.9	50.0	85	70-130	<1	20
Nickel	75.6	97.7	25.0	88	95.9	25.0	81	70-130	2	20
Selenium	76.9	122	50.0	91	122	50.0	90	70-130	<1	20
Silver	33.0	44.2	12.5	90	43.7	12.5	86	70-130	1	20
Thallium	58.3	110	50.0	104	112	50.0	107	70-130	2	20
Vanadium	334	358	25.0	95 #	352	25.0	73 #	70-130	2	20
Zinc	437	457	25.0	77 #	453	25.0	60 #	70-130	<1	20

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**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water

**Service Request:** K1704749  
**Date Collected:** 05/10/17  
**Date Received:** 05/11/17  
**Date Analyzed:** 05/26/17  
**Date Extracted:** 05/19/17

**Duplicate Matrix Spike Summary**  
**Total Metals**

<b>Sample Name:</b>	SWL05101701	<b>Units:</b>	ug/L
<b>Lab Code:</b>	K1704749-001	<b>Basis:</b>	NA
<b>Analysis Method:</b>	200.8		
<b>Prep Method:</b>	EPA CLP-METALS ILM04.0		

Analyte Name	Matrix Spike KQ1706206-04					Duplicate Matrix Spike KQ1706206-05				
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Antimony	115	174	50.0	119	164	50.0	99	70-130	6	20
Arsenic	51.9	108	50.0	111	99.8	50.0	96	70-130	8	20
Barium	593	730	100	137 #	698	100	105 #	70-130	4	20
Beryllium	19.9	22.6	2.50	109 #	23.0	2.50	124 #	70-130	2	20
Cadmium	21.5	48.0	25.0	106	44.5	25.0	92	70-130	8	20
Chromium	48.4	62.2	10.0	137 #	58.2	10.0	97 #	70-130	7	20
Cobalt	385	434	25.0	194 #	410	25.0	98 #	70-130	6	20
Copper	57.3	74.1	12.5	134 #	68.9	12.5	92 #	70-130	7	20
Lead	35.4	83.2	50.0	96	78.2	50.0	85	70-130	6	20
Nickel	74.1	102	25.0	112	95.5	25.0	85	70-130	7	20
Selenium	80.3	123	50.0	85	121	50.0	81	70-130	1	20
Silver	32.3	46.7	12.5	115	43.2	12.5	88	70-130	8	20
Thallium	58.3	117	50.0	117	111	50.0	105	70-130	5	20
Vanadium	323	369	25.0	183 #	350	25.0	106 #	70-130	5	20
Zinc	424	475	25.0	205 #	450	25.0	102 #	70-130	6	20

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**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water

**Service Request:** K1704749  
**Date Collected:** N/A  
**Date Received:** N/A  
**Date Analyzed:** 05/31/17  
**Date Extracted:** 05/26/17

**Duplicate Matrix Spike Summary**  
**Dissolved Metals**

<b>Sample Name:</b>	Batch QC	<b>Units:</b>	ug/L
<b>Lab Code:</b>	K1704852-001	<b>Basis:</b>	NA
<b>Analysis Method:</b>	245.1		
<b>Prep Method:</b>	Method		

<b>Analyte Name</b>	<b>Matrix Spike</b> KQ1706207-07					<b>Duplicate Matrix Spike</b> KQ1706207-08				
	<b>Sample Result</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>	<b>RPD</b>	<b>RPD Limit</b>
Mercury	ND U	3.69	5.00	74	3.66	5.00	73	70-130	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Superset Reference:

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water

**Service Request:** K1704749  
**Date Collected:** N/A  
**Date Received:** N/A  
**Date Analyzed:** 05/31/17  
**Date Extracted:** 05/26/17

**Duplicate Matrix Spike Summary**  
**Total Metals**

**Sample Name:** Batch QC **Units:** ug/L  
**Lab Code:** K1704852-001 **Basis:** NA

**Analysis Method:** 245.1

**Prep Method:** Method

Analyte Name	Matrix Spike KQ1706207-04					Duplicate Matrix Spike KQ1706207-05				
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Mercury	0.06 J	4.45	5.00	88	4.62	5.00	91	70-130	4	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Superset Reference:

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water

**Service Request:** K1704749  
**Date Analyzed:** 05/26/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:** ug/L  
**Basis:** NA

**Lab Control Sample**  
KQ1706204-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	200.7	4970	5000	99	85-115
Calcium	200.7	11800	12500	95	85-115
Iron	200.7	2400	2500	96	85-115
Magnesium	200.7	11800	12500	94	85-115
Manganese	200.7	1190	1250	95	85-115
Potassium	200.7	12000	12500	96	85-115
Sodium	200.7	12100	12500	97	85-115

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water

**Service Request:** K1704749  
**Date Analyzed:** 05/26/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:** ug/L  
**Basis:** NA

**Lab Control Sample**  
KQ1706206-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Antimony	200.8	49.9	50.0	100	85-115
Arsenic	200.8	51.4	50.0	103	85-115
Barium	200.8	101	100	101	85-115
Beryllium	200.8	2.60	2.50	104	85-115
Cadmium	200.8	24.7	25.0	99	85-115
Chromium	200.8	9.88	10.0	99	85-115
Cobalt	200.8	25.1	25.0	101	85-115
Copper	200.8	12.5	12.5	100	85-115
Lead	200.8	48.2	50.0	96	85-115
Nickel	200.8	25.0	25.0	100	85-115
Selenium	200.8	50.3	50.0	101	85-115
Silver	200.8	11.7	12.5	94	85-115
Thallium	200.8	48.8	50.0	98	85-115
Vanadium	200.8	25.4	25.0	102	85-115
Zinc	200.8	23.5	25.0	94	85-115

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150 On-Prop  
**Sample Matrix:** Surface Water

**Service Request:** K1704749  
**Date Analyzed:** 05/31/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:** ug/L  
**Basis:** NA

**Lab Control Sample**  
KQ1706207-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury	245.1	4.48	5.00	90	85-115